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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/392,626	09/09/1999	SHIN MOGI	35.C13816	1507

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EXAMINER

PHAM, HAI CHI

ART UNIT PAPER NUMBER

2861

DATE MAILED: 04/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/392,626

Examiner

Hai C Pham

Applicant(s)

MOGI ET AL.

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02/06/03 & 02/25/03.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 20.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 27-30, 32, 34-39, 41, 43, 44 are rejected under 35 U.S.C. 102(e) as being anticipated by Asami et al. (JP 10-10447).

Regarding the base claims 27 and 37, Asami et al. discloses an optical deflection-scan apparatus comprising a light source unit (1, Fig. 6) comprising a laser light source (3) and a driving circuit board (6) for driving said laser light source, said laser light source including a laser chip having a plurality of emission points (semiconductor laser chip 22a with two light emission points 22b, Fig. 3) for emitting

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laser beams and a terminal (wires connecting the laser light source 3 to the circuit board 6 as shown in Fig.6) for energizing the laser chip, said driving circuit board being connected to the terminal of said laser light source and having a longitudinal edge (driving circuit board 6 having a horizontal longitudinal edge, as shown in Fig. 6 in the direction perpendicular to the paper), scanning means (polygon mirror 14, Fig. 1) for scanning a surface to be scanned with the laser beams emitted by said light source unit, and a housing (optical box 11 in Fig. 1, or 2 in Fig. 6) having a wall (2, as shown in Fig. 6) wherein said housing contains said scanning means (Fig. 1) and supports said light source unit on the wall (Figs. 2, 6), and wherein said laser light source is fixed to said driving circuit board (6) such that a straight line passing the plurality of emission points of said laser light source is inclined with respect to the longitudinal edge of said driving circuit board (to adjust the scanning line spacing, the flange 21b of the holder 21 is rotated around the optical axis B such that the line connecting the two light emitting points 22b is inclined with respect to the horizontal line, the holder is then fixed to the housing by screws 23, and the driving board is finally fixed to housing via the holder with the longitudinal edge of the driving circuit board being parallel to the top edge of the housing as shown in Fig. 6). (See paragraphs [0002], [0012], and [0016] of the English translation).

With regard to claim 28, Asami et al. further the longitudinal edge of said driving circuit board being arranged substantially in parallel with the longitudinal edge of the wall of said housing (Fig. 6).

As to claims 29 and 38, Asami et al. teaches the driving circuit board having a substantially rectangular shape (Fig. 6).

As to claims 30 and 39, Asami et al. teaches the light source unit comprising a holder (21) holding the laser light source.

With regard to claims 32, 41, Asami et al. teaches the plurality of emissions points (22b, 22b) of the laser light source being arranged linearly.

With regard to claims 34, 43, Asami et al. also discloses the light source unit comprising a collimator lens (8) for collimating the laser beams emitted from said laser light source and a lens barrel (7) holding said collimator lens, said lens barrel being integrated with said holder (Fig. 2).

With regard to claims 35, 44, Asami et al. teaches the laser light source being a multi-beam semiconductor laser.

With regard to claim 36, Asami et al. also discloses the scanning means comprising a rotary polygon mirror (14) for deflecting the laser beams emitted by said light source unit and an imaging lens (Fig. 1) for focusing the laser beams deflected by said rotary polygon mirror.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 31 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asami et al. in view of Aoki (U.S. 5,408,493).

Asami et al. discloses all the basic limitations of the claimed invention except for the laser array being fixed with an inclination with respect to a reference surface of the laser holder.

However, Aoki discloses a laser scanning apparatus in which the laser (6, Fig. 4B) has an angle-adjusting holder (12) for adjusting an inclination angle with respect to the fixed plate (11) to obtain a desired point image position on the surface to be scanned.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Asami et al. with the aforementioned teaching of Aoki. Doing so would allow the adjustment of the optical path of the laser beam to produce an image point at a desired position on the surface to be scanned.

5. Claims 33 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asami et al. in view of Nakajima et al. (U.S. 5,999,345).

Asami et al. discloses all the basic limitations of the claimed invention except for the multi-beam semiconductor laser having a plurality of two-dimensionally arrayed emission points.

However, it is well known in the art that the selection of one-dimensional or two-dimensional array lasers in an optical scanning device would be a matter of design

choice to fit a specific requirement. Nakajima et al., for example, discloses a laser holder that can support a one-dimensional or two-dimensional laser array while allowing the adjustment of the distance between the multiple laser beams (Figs. 1, 3, 5 and 6). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the laser holder of Asami et al. to hold a plurality of two-dimensional laser arrays as taught by Nakajima et al. Doing so would allow to increase the printing speed of the laser printer. Moreover, the implementation of such laser holder would involve only routine skill in the art.

Response to Arguments

6. Applicant's arguments with respect to claims 27-44 have been considered but are moot in view of the new grounds of rejection presented in this Office action.

7. Applicant's arguments filed 10/03/00 against the applied reference Asami et al. (JP 10-10447) have been fully considered but are persuasive.

With regard to Applicants' arguments that "the Asami et al. document fails to disclose or suggest at least the features of a multi-beam light source unit being fixed to a sidewall of a housing and a longitudinal edge of a rectangular laser driving board being generally parallel with the longitudinal edge of the sidewall" and that "the Asami et al. document fails to disclose or suggest at least the features of a plurality of emission points of the multi-beam semiconductor laser being aligned along a line which is inclined with respect to a longitudinal edge of a rectangular laser driving circuit board"

(response dated 10/03/00, page 10), the examiner respectfully disagrees. Asami et al. ('447) teaches the multi-beam light source unit being first adjusted by rotating the flange part (21b) of the holder (21) so that the spacing of the multiple light emission points (22b) in the secondary scanning direction will be of the prescribed value P, this adjustment results in the inclination of the laser chip such that the line passing the light emission points is inclined with respect to the secondary scanning direction (Fig. 3), and thus forms the same inclination angle with respect to the longitudinal edge of the optical box (11). Thereafter, the holder is fixed to the sidewall (2) of the optical box, and the rectangular laser driving circuit board (6) is finally fixed to the sidewall of the optical box via the holder (Fig. 6), the driving circuit board being not affected, e.g., rotated, by the above adjustment.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C Pham whose telephone number is (703) 308-1281. The examiner can normally be reached on T-F (8:30-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin R. Fuller can be reached on (703) 308-0079. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722, (703) 308-7724, (703) 308-7382, (703) 305-3431, (703) 305-3432 for regular communications and for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



HAI PHAM
PRIMARY EXAMINER

April 11, 2003